Attachment 1
2005 Annual Radioactive Effluent Releases Report for TMI
5928-06-20444

Summary of Radioactive Liquid and Gaseous Effluents Released from TMI during 2005

TABLE 1A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES
TMI-1

	UNITS	2005 1ST QUARTER	2005 2ND QUARTER	2005 3RD QUARTER	2005 4TH QUARTER	EST. TOTAL ERROR %
A. FISSION AND ACTIVATION GASES						
1. TOTAL RELEASE	Ci	3.49E-02	9.90E-02	1.56E-01	1.16E+00	25%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	4.48E-03	1.26E-02	1.96E-02	1.46E-01	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
B. IODINES						
1. TOTAL IODINE I-131	Ci	7.55E-08	2.24E-07	3.28E-07	1.27E-07	25%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	9.71E-09	2.85E-08	4.13E-08	1.60E-08	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
C. PARTICULATES						
1. PARTICULATES WITH HALF-LIVES > 8 DAYS	Ci	<LLD	<LLD	<LLD	7.16E-06	25%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	NA	NA	NA	9.00E-07	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
4. GROSS ALPHA RADIOACTIVITY	Ci	<LLD	<LLD	<LLD	<LLD	
D. TRITIUM						
1. TOTAL RELEASE	Ci	7.11E+01	4.54E+01	6.47E+01	3.44E+01	15%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	9.15E+00	5.78E+00	8.15E+00	4.32E+00	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	

* % ODCM LIMITS: LISTED ON DOSE SUMMARY TABLE

TABLE 1C
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT (2005)
GASEOUS EFFLUENTS - GROUND LEVEL RELEASES
TMI-1

		CONTINUOUS		BATCH		CONTINUOUS		BATCH	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
1. FISSION GASES									
AR 41	Ci	<LLD	<LLD	<LLD	1.65E-02	<LLD	<LLD	4.88E-02	7.40E-02
KR 85M	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
KR 85	Ci	<LLD	<LLD	1.52E-03	<LLD	<LLD	<LLD	<LLD	<LLD
KR 87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
KR 88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
XE131M	Ci	<LLD	<LLD	8.79E-04	1.25E-03	<LLD	<LLD	6.04E-04	9.29E-03
XE 133	Ci	<LLD	<LLD	3.24E-02	8.11E-02	<LLD	<LLD	1.06E-01	1.07E+00
XE133M	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	9.44E-03
XE 135M	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
XE 135	Ci	6.23E-05	7.30E-05	<LLD	<LLD	<LLD	6.00E-05	5.45E-04	2.12E-03
XE 138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
TOTAL FOR PERIOD	Ci	6.23E-05	7.30E-05	3.48E-02	9.89E-02	NA	6.00E-05	1.56E-01	1.16E+00
2. IODINES									
I 131	Ci	7.55E-08	2.24E-07	<LLD	<LLD	3.28E-07	1.27E-07	<LLD	<LLD
I 133	Ci	6.78E-07	2.45E-06	<LLD	<LLD	3.06E-06	8.10-7	<LLD	<LLD
I 135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
TOTAL FOR PERIOD	Ci	7.54E-07	2.67E-06	NA	NA	3.39E-06	1.27E-07	NA	NA
3. PARTICULATES									
C0 58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	7.16E-06	<LLD	<LLD
TOTAL FOR PERIOD	Ci	NA	NA	NA	NA	NA	7.16E-06	NA	NA

TABLE 2A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES
TMI-1

	UNITS	2005 1ST QUARTER	2005 2ND QUARTER	2005 3RD QUARTER	2005 4TH QUARTER	EST. TOTAL ERROR %
A. FISSION AND ACTIVATION PRODUCTS						
1. TOTAL RELEASES (NOT INCLUDING TRITIUM, GASES, ALPHA)	Ci	<LLD	<LLD	3.18E-05	1.51E-03	25%
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ml	NA	NA	4.83E-12	1.93E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	*	*	
B. TRITIUM						
1. TOTAL RELEASE	Ci	4.38E+02	1.31E-01	3.10E+02	1.67E+01	25%
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ml	6.94E-05	1.94E-08	4.70E-05	2.13E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	*	*	
C. DISSOLVED AND ENTRAINED GASES						
1. TOTAL RELEASE	Ci	7.83E-05	<LLD	5.29E-05	<LLD	25%
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ml	1.24E-11	NA	8.02E-12	NA	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	*	*	
D. GROSS ALPHA ACTIVITY						
1. TOTAL RELEASE	Ci	<LLD	<LLD	<LLD	<LLD	25%
E. VOLUME OF WASTE RELEASED (PRIOR TO DILUTION)	liters	6.75E+06	6.96E+06	9.19E+06	1.29E+07	10%
F. VOLUME OF DILUTION WATER USED	liters	6.30E+09	6.74E+09	6.60E+09	7.84E+09	10%

* % ODCM LIMITS: LISTED ON DOSE SUMMARY TABLE

TABLE 2B
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT (2005)
LIQUID EFFLUENTS
TMI-1

		CONTINUOUS		BATCH		CONTINUOUS		BATCH	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
CR 51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
MN 54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
FE 59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
CO 58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
CO 60	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	7.27E-06	2.47E-06
ZN 65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
SR 89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
SR 90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
ZR 95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
NB 95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
MO 99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
TC 99M	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I 131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
CS 134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
CS 137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	1.50E-03	2.46E-05	1.15E-05
BA 140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
LA 140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
CE 141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
FE 55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E-03	3.19E-05	1.40E-05
XE 133	Ci	<LLD	<LLD	7.83E-05	<LLD	<LLD	<LLD	5.29E-05	<LLD
XE 135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

SUPPLEMENTAL INFORMATION

FACILITY: TMI UNIT 1 LICENSE: DPR 50-289

1. REGULATORY LIMITS - - - REFER TO TMI OFFSITE DOSE CALCULATION MANUAL

A. FISSION AND ACTIVATION GASES:
B. IODINES:
C. PARTICULATES, HALF-LIVES > 8 DAYS:
D. LIQUID EFFLUENTS:

2. MAXIMUM EFFLUENT CONCENTRATIONS - - - TEN TIMES 10 CFR 20, APPENDIX B TABLE 2

PROVIDE THE MAXIMUM EFFLUENT CONCENTRATIONS USED IN DETERMINING ALLOWABLE RELEASE RATES OR CONCENTRATIONS.

A. FISSION AND ACTIVATION GASES:
B. IODINES:
C. PARTICULATES, HALF-LIVES > 8 DAYS:
D. LIQUID EFFLUENTS:

3. AVERAGE ENERGY

PROVIDE THE AVERAGE ENERGY (E-BAR) OF THE RADIONUCLIDE MIXTURE IN RELEASES OF FISSION AND ACTIVATION GASES, IF APPLICABLE

E-BAR BETA = 2.84E-01 MeV
E-BAR GAMMA = 5.34E-01 MeV
E-BAR BETA AND GAMMA = 8.18E-01 MeV

4. MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

PROVIDE THE METHODS USED TO MEASURE OR APPROXIMATE THE TOTAL RADIOACTIVITY IN EFFLUENTS AND THE METHODS USED TO DETERMINE RADIONUCLIDE COMPOSITION:

A. FISSION AND ACTIVATION GASES: HPGE SPECTROMETRY, LIQUID SCINTILLATION
B. IODINES: HPGE SPECTROMETRY
C. PARTICULATES HPGE SPECTROMETRY, GAS FLOW PROPORTIONAL, BETA SPECTROMETRY
D. LIQUID EFFLUENTS: HPGE SPECTROMETRY, LIQUID SCINTILLATION

5. BATCH RELEASES

PROVIDE THE FOLLOWING INFORMATION RELATING TO BATCH RELEASES OF RADIOACTIVITY MATERIALS IN LIQUID AND GASEOUS EFFLUENTS.

A. LIQUID (ALL TIMES IN MINUTES)	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
1. NUMBER OF BATCH RELEASES:	13	0	25	7
2. TOTAL TIME PERIOD FOR BATCH RELEASES:	6460	0	8063	1621
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE:	740	0	720	291
4. AVERAGE TIME PERIOD FOR BATCH RELEASES:	496	0	322	231
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE:	100	0	215	192
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM: (CFS)	3.94E+06	2.60E+06	3.95E+05	2.35E+06

B. GASEOUS (ALL TIMES IN MINUTES)				
1. NUMBER OF BATCH RELEASES:	5	9	6	14
2. TOTAL TIME PERIOD FOR BATCH RELEASES:	4180	5665	4581	39423
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE:	1095	885	1380	27862
4. AVERAGE TIME PERIOD FOR BATCH RELEASES:	836	629	763	2815
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE:	740	13	115	13

6. ABNORMAL RELEASES

A. LIQUID				
1. NUMBER OF RELEASES:	-0-	-0-	-0-	-0-
2. TOTAL ACTIVITY RELEASED: (CURIES)	N/A	N/A	N/A	N/A

B. GASEOUS				
1. NUMBER OF RELEASES:	-0-	-0-	-0-	1
2. TOTAL ACTIVITY RELEASED: (CURIES)	N/A	N/A	N/A	5.60E-02

TABLE 1A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES
TMI-2

	UNITS	2005 1ST QUARTER	2005 2ND QUARTER	2005 3RD QUARTER	2005 4TH QUARTER	EST. TOTAL ERROR %
A. FISSION AND ACTIVATION GASES						
1. TOTAL RELEASE	Ci	<LLD	<LLD	<LLD	<LLD	27%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	N/A	N/A	N/A	N/A	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
B. IODINES	NOT APPLICABLE FOR TMI-2					
C. PARTICULATES						
1. PARTICULATES WITH HALF-LIVES > 8 DAYS	Ci	<LLD	<LLD	<LLD	<LLD	27%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	N/A	N/A	N/A	N/A	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
4. GROSS ALPHA RADIOACTIVITY	Ci	<LLD	<LLD	<LLD	<LLD	
D. TRITIUM						
1. TOTAL RELEASE	Ci	6.71E-01	3.56E-01	2.55E-01	1.55E-01	27%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	8.63E-02	4.53E-02	3.21E-02	1.95E-02	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
# BATCH RELEASES		0	0	0	0	

* % ODCM LIMITS: LISTED ON DOSE SUMMARY TABLE

TABLE 1C
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT (2005)
GASEOUS EFFLUENTS - GROUND LEVEL RELEASES
TMI-2

		CONTINUOUS		BATCH		CONTINUOUS		BATCH	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
1. FISSION GASES									
AR 41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
KR 85M	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
KR 85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
KR 87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
KR 88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
XE131M	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
XE 133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
XE133M	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
XE 135M	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
XE 135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
XE 138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
TOTAL FOR PERIOD	Ci	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. IODINES		NOT APPLICABLE TO TMI-2							
3. PARTICULATES									
CS 137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
TOTAL FOR PERIOD	Ci	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. TRITIUM									
TRITIUM	Ci	6.71E-01	3.56E-01	<LLD	<LLD	2.55E-01	1.55E-01	<LLD	<LLD

TABLE 2A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES
TMI-2

	UNITS	2005 1ST QUARTER	2005 2ND QUARTER	2005 3RD QUARTER	2005 4TH QUARTER	EST. TOTAL ERROR %
A. FISSION AND ACTIVATION PRODUCTS						
1. TOTAL RELEASES (NOT INCLUDING TRITIUM, GASES, ALPHA)	Ci	6.57E-07	4.60E-06	1.23E-05	1.82E-06	27%
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ml	1.04E-13	6.82E-13	1.87E-12	2.32E-13	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	*	*	
B. TRITIUM						
1. TOTAL RELEASE	Ci	3.29E-05	1.09E-04	5.83E-05	6.68E-05	27%
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ml	5.22E-12	1.62E-11	8.85E-12	8.52E-12	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	*	*	
C. DISSOLVED AND ENTRAINED GASES						
1. TOTAL RELEASE	Ci	<LLD	<LLD	<LLD	<LLD	27%
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ml	NA	NA	NA	NA	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	*	*	
D. GROSS ALPHA ACTIVITY						
1. TOTAL RELEASE	Ci	<LLD	<LLD	<LLD	<LLD	10%
E. VOLUME OF WASTE RELEASED (PRIOR TO DILUTION)	liters	2.79E+03	7.24E+03	6.04E+03	3.74E+03	3%
F. VOLUME OF DILUTION WATER USED	liters	6.30E+09	6.74E+09	6.59E+09	7.84E+09	1%
# BATCH RELEASES		2	3	5	2	

* % ODCM LIMITS: LISTED ON DOSE SUMMARY TABLE

TABLE 2B
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT (2005)
LIQUID EFFLUENTS
TMI-2

		CONTINUOUS		BATCH		CONTINUOUS		BATCH	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
CO 60	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
ZN 65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
SR 90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
SB 125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
NB 95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
CS 134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
CS 137	Ci	<LLD	<LLD	6.57E-07	4.60E-06	<LLD	<LLD	1.23E-05	1.82E-06
H3	Ci	<LLD	<LLD	3.29E-05	1.09E-04	<LLD	<LLD	5.83E-05	6.68E-05
TOTAL FOR PERIOD	Ci	NA	NA	3.36E-05	1.14E-04	NA	NA	7.06E-05	6.86E-05

Attachment 2
2005 Annual Radioactive Effluent Releases Report for TMI
5928-06-20444

Solid Waste Shipped Offsite During 2005

TMI-1 TABLE 3 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT SOLID WASTE AND IRRADIATED FUEL SHIPMENTS			
A. Solid waste shipped off-site for burial or disposal (not irradiated fuel)			
1. Type of waste	UNIT	12 month period	EST. Total Error %
a. Spent resins, filter sludges, Evaporator bottoms, etc.	m^3 Ci	12.2 m3 71.0 Ci	25%
b. Dry compressible waste, contaminated equipment, etc.	m^3 Ci	650.8m3 1.50Ci	25%
c. Irradiated components, control rods, etc.	m^3 Ci	N/A	N/A
d. Other (describe) :	m^3 Ci	N/A	N/A
2. Estimate of major nuclide composition (by type of waste)			
a. Ni63	57.4%		
Cs137	28.5%		
Fe55	6.96%		
Co60	4.46%		
b. Cs137	49.6%		
Co58	29.1%		
Ni63	13.8%		
Fe55	1.99%		
c. N/A			
d. N/A			
3. Solid Waste Disposition Number of Shipments	Mode of Transportation		Destination
See attached for this information			
B. Irradiated Fuel Shipments (Disposition)			
	None		
Number of Shipments			
N/A	Mode Transport	Destination	

WASTE SHIPPED AS FOLLOWS

A.1.a

Two (2)- steel liners @ 215 ft3 each – Dewatered Resin

A.1.b

Fourteen(14)– Steel Cargo Container @ 1280 ft3 each- DAW-Metal

Five(5)- Steel Boxes @ 64 ft3 each – DAW-Metal

Seven(7) Steel Boxes @ 96 ft3 each –DAW/Metal

Five(5)- Poly Bags @ 200 ft3 each- Soil

Two(2) Poly Bags @ 1535 ft3 each- Feedwater Hearters

A.3.a

Two Shipments	Hittman Transport/Cask	Studsvik- Erwin, TN

A.3.b

Nine Shipments	Hittman Transport/Flatbed	Duratek-Oak Ridge,Tn
One Shipment	Hittman Transport/Flatbed	ALARON-Wampum,Pa
One Shipment	R & R Trucking/Flatbed	Duratek – Oak Ridge, TN
Two Shipments	J Supor & Son Trucking	Envirocare Of Utah-Clive,UT

NOTE- All Shipments were TYPE-A LSA-II

There were no changes to the Process Control Program (PCP) for TMI-1 during 2005.

TMI-2 TABLE 3 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT SOLID WASTE AND IRRADIATED FUEL SHIPMENTS			
A. Solid waste shipped off-site for burial or disposal (not irradiated fuel)			
1. Type of waste	UNIT	12 month period	EST. Total Error %
a. Spent resins, filter sludges, Evaporator bottoms, etc.	m^3 Ci	N/A	N/A
b. Dry compressible waste, contarminated equipment, etc.	m^3 Ci	N/A	N/A
c. Irradiated components, control rods, etc.	m^3 Ci	N/A	N/A
d. d. Other (describe): Mixed Waste	m^3 Ci	N/A	N/A
2. Estimate of major nuclide composition (by type of waste)			
a. Cs137	N/A		
Cs134			
Ni63			
Fe55			
b. Co58	N/A		
Cs137			
Ni63			
Sr90			
c. Ni63	N/A		
Co58			
Fe55			
Co60			
d. N/A	N/A		
3. Solid Waste Disposition Number of Shipments	Mode of Transportation		Destination
No Shipment during this period			
B. Irradiated Fuel Shipments (Disposition)			
	None		
Number of Shipments			
N/A	Mode Transport	Destination	

Attachment 3
2005 Annual Radioactive Effluent Releases Report for TMI
5928-06-20444

Summary of Abnormal Releases from the TMI Site During 2005

There were no Abnormal releases from TMI-2 in 2005. There was one unplanned or uncontrolled release at TMI-1 in 2005. It was as a result of a steam leak for EF-P-1. This is the emergency steam driven feed water pump. A leaking valve allows steam to vent to the atmosphere through the normal exhaust pipe. This pathway was estimated to release 0.056 curies of tritium into the environment. This resulted in an estimated total body dose of 1.69E-4 mrem to the maximally exposed individual. The source term was included in the annual dose calculations for 2005.

Attachment 4
2005 Annual Radioactive Effluent Releases Report for TMI
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Changes to the Process Control Program and the Offsite Dose Calculation Manual during 2005 And a listing of new locations for dose calculations and/or environmental monitoring Identified by the Land Use Census

1. **Changes to the Process Control Program**

   There were no changes to the Process Control Program.

2. **Changes to the Offsite Dose Calculation Manual**

   There were no changes to the Offsite Dose Calculation Manual.

3. **A listing of new locations for dose calculations and/or environmental monitoring identified by the Land Use Census.**

   Based on the results of the 2005 land use census, no changes to the Radiological Environmental Monitoring Program are required. The residential census identified a change in the nearest residence in the west sector. A summer home trailer was removed from Shelly Island. The distance of the nearest receptor went from 560 meters to 1120 meters. The receptor location files were changed in the dose calculation software.

Attachment 5
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Instrumentation not Returned to Operable Status within 30 Days During 2005

There was no instrumentation not returned to operable status within 30 days per the TMI ODCM Part 1, Sections 2.1.1.b and 2.1.2.b and Part 2, Section 2.1.2.b during 2005.

Attachment 6
2005 Annual Radioactive Effluent Releases Report for TMI
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Annual Summary of Hourly Meteorological Data for 2005

The osprey did return and nest on the TMI meteorological tower. However, the station had adjusted the semi-annual calibration schedule and was able to calibrate the sensors and instrumentation before and after the osprey nested. The percent data recovery for meteorological information for 2005 was 98.5 percent. The data are presented by quarter.

Period of Record: January - March 2005
Stability Class - Extremely Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	3	0	0	0	0	3
NNE	0	1	0	0	0	0	1
NE	0	1	0	0	0	0	1
ENE	0	1	1	0	0	0	2
E	0	1	4	3	0	0	8
ESE	0	1	6	1	0	0	8
SE	0	1	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	1	6	3	1	1	0	12
SW	3	1	3	0	0	0	7
WSW	1	2	1	0	0	0	4
W	2	0	5	0	0	0	7
WNW	1	0	3	1	1	0	6
NW	4	5	8	2	2	0	21
NNW	5	7	6	9	6	1	34
Variable	0	0	0	0	0	0	0
Total	17	30	4	17	10	1	115

Hours of calm in this stability class: 0
Hours of missing wind or stability measurements in this stability class: 0

Stability Class - Moderately Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	6	1	0	0	0	8
NNE	0	1	0	0	0	0	1
NE	0	5	4	0	0	0	9
ENE	0	3	3	0	0	0	6
E	0	5	10	0	0	0	15
ESE	1	3	3	1	0	0	8
SE	0	1	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	1	2	0	0	0	0	3
SSW	0	2	0	0	0	0	2
SW	2	3	0	1	0	0	6
WSW	0	1	1	0	0	0	2
W	1	3	6	3	0	0	13
WNW	2	0	6	18	4	0	30
NW	1	5	9	12	4	3	34
NNW	3	8	4	5	2	1	23
Variable	0	0	0	0	0	0	0
Total	12	48	47	40	10	4	161

Hours of calm in this stability class: 0
Hours of missing wind or stability measurements in this stability class: 0

Stability Class - Slightly Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	1	0	0	0	2
NNE	1	1	0	0	0	0	2
NE	0	1	0	0	0	0	1
ENE	0	1	4	0	0	0	5
E	0	5	10	0	0	0	15
ESE	0	3	6	0	0	0	9
SE	0	1	1	0	0	0	2
SSE	1	0	0	0	0	0	1
S	1	0	0	0	0	0	1
SSW	0	1	2	1	0	0	4
SW	1	2	1	1	0	0	5
WSW	0	0	1	0	0	0	1
W	0	0	1	2	0	0	3
WNW	0	1	4	10	3	1	19
NW	0	2	6	11	7	0	26
NNW	0	5	5	5	1	0	16
Variable	0	0	0	0	0	0	0
Total	5	23	42	30	11	1	112

Hours of calm in this stability class: 0
Hours of missing wind and stability measurements in this stability class: 0

Stability Class - Neutral - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	10	27	16	5	1	0	59
NNE	8	30	3	0	0	0	41
NE	8	36	1	0	0	0	45
ENE	12	36	8	0	0	0	56
E	4	46	15	0	0	0	65
ESE	4	29	48	3	0	0	84
SE	8	6	15	1	0	0	30
SSE	6	9	5	0	0	0	20
S	5	16	7	4	0	0	32
SSW	4	9	5	0	0	0	18
SW	6	10	1	3	0	0	20
WSW	2	19	4	1	0	0	26
W	3	27	37	13	0	0	80
WNW	10	31	67	68	9	1	186
NW	5	29	70	50	15	11	70
NNW	12	34	22	22	11	0	101
Variable	0	0	0	0	0	0	0
Total	107	394	324	170	36	2	1033

Hours of calm in this stability class: 0
Hours of missing wind and stability measurements in this stability class: 0

Stability Class - Slightly Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	19	16	6	1	0	0	42
NNE	15	2	1	0	0	0	18
NE	4	5	0	0	0	0	9
ENE	6	12	0	0	0	0	18
E	6	15	3	0	0	0	24
ESE	4	7	4	0	0	0	15
SE	3	4	1	0	0	0	8
SSE	3	1	5	0	0	0	9
S	2	5	4	0	0	0	11
SSW	8	10	5	1	0	0	24
SW	9	11	2	0	0	0	22
WSW	12	9	1	0	0	0	22
W	4	24	2	0	0	0	30
WNW	7	15	18	3	0	0	43
NW	9	13	22	5	2	0	51
NNW	16	19	9	9	2	0	55
Variable	0	0	0	0	0	0	0
Total	127	168	83	19	4	0	401

Hours of calm in this stability class: 0
Hours of missing wind and stability measurements in this stability class: 0

Stability Class - Moderately Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	5	9	1	0	0	0	15
NNE	4	0	0	0	0	0	4
NE	0	2	0	0	0	0	2
ENE	6	5	0	0	0	0	11
E	2	1	0	0	0	0	3
ESE	3	1	0	0	0	0	4
SE	3	0	0	0	0	0	3
SSE	6	0	0	0	0	0	6
S	4	3	0	0	0	0	7
SSW	8	4	0	0	0	0	12
SW	8	6	0	0	0	0	14
WSW	5	6	0	0	0	0	11
W	8	3	0	0	0	0	11
WNW	8	7	0	0	0	0	15
NW	10	8	2	0	0	0	20
NNW	10	14	6	1	0	0	31
Variable	0	0	0	0	0	0	0
Total	90	69	9	1	0	0	169

Hours of calm in this stability class: 0
Hours of missing wind and stability measurements in this stability class: 0

Stability Class - Extremely Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	4	3	0	0	0	0	7
NNE	2	0	0	0	0	0	2
NE	1	0	0	0	0	0	1
ENE	3	0	0	0	0	0	3
E	2	0	0	0	0	0	2
ESE	3	0	0	0	0	0	3
SE	2	0	0	0	0	0	2
SSE	6	0	0	0	0	0	6
S	9	0	0	0	0	0	9
SSW	2	4	0	0	0	0	6
SW	11	3	0	0	0	0	14
WSW	9	4	1	0	0	0	14
W	8	0	1	0	0	0	9
WNW	7	0	0	0	0	0	7
NW	10	1	0	0	0	0	11
NNW	10	15	4	0	0	0	29
Variable	0	0	0	0	0	0	0
Total	89	30	6	0	0	0	125

Hours of calm in this stability class: 0
Hours of missing wind and stability measurements in this stability class: 0

Stability Class - Extremely Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 150 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 115
Hours of missing stability measurements in all stability classes: 11

Period of Record: April - June 2005
Stability Class - Extremely Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Speed (in mph)

Wind Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	16	5	2	0	0	24
NNE	0	9	3	0	0	0	12
NE	0	14	5	0	0	0	19
ENE	0	11	16	1	0	0	28
E	0	9	6	0	0	0	15
ESE	0	5	6	0	0	0	11
SE	0	10	9	0	0	0	19
SSE	0	6	4	2	0	0	12
S	5	14	3	1	0	0	23
SSW	2	33	14	2	0	0	51
SW	6	31	16	2	0	0	55
WSW	5	13	7	1	0	0	26
W	11	11	18	5	0	0	45
WNW	11	13	16	0	1	0	41
NW	11	37	28	1	0	0	77
NNW	13	35	19	6	0	0	73
Variable	0	0	0	0	0	0	0
Total	65	267	175	23	1	0	531

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0

Stability Class - Moderately Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Speed (in mph)

Wind Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	3	3	0	0	0	6
NNE	0	3	0	0	0	0	3
NE	0	0	1	0	0	0	1
ENE	0	0	2	0	0	0	2
E	0	3	4	0	0	0	7
ESE	0	2	1	0	0	0	3
SE	1	2	4	2	0	0	9
SSE	1	1	0	1	0	0	3
S	0	2	1	0	0	0	3
SSW	1	6	4	1	0	0	12
SW	0	2	2	0	0	0	4
WSW	2	2	3	0	0	0	7
W	1	1	13	1	0	0	16
WNW	2	5	5	7	0	0	19
NW	3	4	12	2	0	0	21
NNW	1	2	12	0	0	0	15
Variable	0	0	0	0	0	0	0
Total	12	38	67	14	0	0	131

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0

Stability Class - Slightly Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	1	1	0	0	0	4
NNE	0	0	0	0	0	0	0
NE	2	1	0	0	0	0	3
ENE	0	0	0	0	0	0	0
E	0	1	3	0	0	0	4
ESE	0	1	2	0	0	0	3
SE	0	0	0	0	0	0	0
SSE	0	0	1	0	0	0	1
S	0	4	2	0	0	0	6
SSW	2	6	0	1	0	0	9
SW	0	1	3	0	0	0	4
WSW	0	1	2	0	0	0	3
W	3	0	3	6	0	0	12
WNW	1	3	3	1	0	0	8
NW	2	3	6	1	0	0	12
NNW	0	4	4	2	0	0	10
Variable	0	0	0	0	0	0	0
Total	12	26	30	11	0	0	79

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0

Stability Class - Neutral - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	6	20	9	0	0	0	35
NNE	1	9	3	0	0	0	13
NE	6	13	1	0	0	0	20
ENE	1	18	4	0	0	0	23
E	4	35	28	0	0	0	67
ESE	3	12	18	4	0	0	37
SE	3	8	11	3	0	0	25
SSE	5	20	6	1	0	0	32
S	1	46	15	0	0	0	62
SSW	2	27	6	3	0	0	38
SW	10	28	8	0	0	0	46
WSW	7	10	12	3	0	0	32
W	2	18	17	10	2	0	49
WNW	6	16	36	17	6	0	81
NW	6	19	34	8	1	0	68
NNW	5	33	19	6	5	0	68
Variable	0	0	0	0	0	0	0
Total	68	332	227	55	14	0	696

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0

Stability Class - Slightly Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	7	27	16	1	0	0	51
NNE	1	26	4	0	0	0	31
NE	4	11	1	0	0	0	16
ENE	5	8	0	0	0	0	13
E	2	10	0	0	0	0	12
ESE	2	2	1	0	0	0	5
SE	9	10	0	0	0	0	19
SSE	7	7	1	0	0	0	15
S	10	12	0	0	0	0	22
SSW	9	13	3	0	0	0	25
SW	16	21	3	1	0	0	41
WSW	12	27	3	0	0	0	42
W	25	31	2	0	0	0	58
WNW	7	11	6	1	0	0	25
NW	14	14	7	2	0	0	37
NNW	7	17	11	2	3	0	40
Variable	0	0	0	0	0	0	0
Total	137	247	58	7	3	0	452

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0

Stability Class - Moderately Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	4	8	0	0	0	0	12
NNE	7	3	0	0	0	0	10
NE	0	1	0	0	0	0	1
ENE	1	3	0	0	0	0	4
E	2	2	0	0	0	0	4
ESE	5	3	0	0	0	0	8
SE	7	2	0	0	0	0	9
SSE	4	0	0	0	0	0	4
S	7	6	4	0	0	0	17
SSW	14	2	0	0	0	0	16
SW	14	1	0	0	0	0	15
WSW	10	0	0	0	0	0	10
W	16	1	1	0	0	0	18
WNW	9	1	0	0	0	0	10
NW	12	3	0	0	0	0	15
NNW	12	16	1	0	0	0	29
Variable	0	0	0	0	0	0	0
Total	124	52	6	0	0	0	182

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0

Stability Class - Extremely Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	7	0	0	0	0	10
NNE	1	0	0	0	0	0	1
NE	1	0	0	0	0	0	1
ENE	2	0	0	0	0	0	2
E	0	3	0	0	0	0	3
ESE	5	0	0	0	0	0	5
SE	4	0	0	0	0	0	4
SSE	4	0	0	0	0	0	4
S	9	6	1	0	0	0	16
SSW	5	4	0	0	0	0	9
SW	2	1	0	0	0	0	3
WSW	2	0	0	0	0	0	2
W	7	2	0	0	0	0	9
WNW	4	1	0	0	0	0	5
NW	5	0	0	0	0	0	5
NNW	5	2	1	0	0	0	8
Variable	0	0	0	0	0	0	0
Total	59	26	2	0	0	0	87

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0

Period of Record: July - September 2005
Stability Class - Extremely Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	14	3	0	0	0	18
NNE	0	4	1	0	0	0	5
NE	0	3	1	0	0	0	4
ENE	1	4	0	0	0	0	5
E	2	9	3	0	0	0	14
ESE	1	7	14	0	0	0	22
SE	1	14	8	0	0	0	23
SSE	1	3	2	0	0	0	6
S	0	10	2	0	0	0	12
SSW	2	12	12	0	0	0	26
SW	7	30	6	0	0	0	43
WSW	8	6	0	0	0	0	14
W	11	5	2	0	0	0	18
WNW	11	33	2	0	0	0	46
NW	30	51	18	0	0	0	99
NNW	8	40	26	2	0	0	76
Variable	0	0	0	0	0	0	0
Total	84	245	100	2	0	0	431

Hours of calm in this stability class: 0
Hours of missing wind and stability measurements in this stability class: 0

Stability Class - Moderately Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	4	0	0	0	0	5
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	1	1	0	0	0	0	2
E	0	2	0	0	0	0	2
ESE	0	2	4	0	0	0	6
SE	0	4	4	0	0	0	8
SSE	0	0	0	0	0	0	0
S	0	1	3	0	0	0	4
SSW	3	9	5	1	0	0	18
SW	6	6	4	0	0	0	16
WSW	5	4	1	0	0	0	10
W	5	2	2	0	0	0	9
WNW	8	7	2	1	0	0	18
NW	11	13	13	2	0	0	39
NNW	4	7	4	1	0	0	16
Variable	0	0	0	0	0	0	0
Total	44	63	42	5	0	0	154

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Slightly Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	2	0	0	0	0	5
NNE	1	1	0	0	0	0	2
NE	0	1	0	0	0	0	1
ENE	1	0	0	0	0	0	1
E	0	4	0	0	0	0	4
ESE	0	0	1	0	0	0	1
SE	1	1	1	0	0	0	3
SSE	0	2	0	0	0	0	2
S	1	4	3	0	0	0	8
SSW	0	0	2	0	0	0	2
SW	2	4	0	0	0	0	6
WSW	2	0	2	0	0	0	4
W	5	1	0	0	0	0	6
WNW	1	3	2	0	0	0	6
NW	3	8	3	0	0	0	14
NNW	1	3	0	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	21	34	14	0	0	0	69

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Neutral - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	8	12	10	0	0	0	30
NNE	10	5	0	0	0	0	15
NE	14	7	1	0	0	0	22
ENE	6	11	0	0	0	0	17
E	5	21	3	0	0	0	29
ESE	3	19	9	0	0	0	31
SE	1	16	11	1	0	0	29
SSE	6	22	2	0	0	0	30
S	5	21	16	5	1	0	48
SSW	5	7	8	6	0	0	26
SW	7	10	2	0	0	0	19
WSW	10	10	0	0	0	0	20
W	8	6	7	0	0	0	21
WNW	7	23	6	0	0	0	36
NW	10	22	19	7	0	0	58
NNW	7	12	6	1	0	0	26
Variable	0	0	0	0	0	0	0
Total	112	224	100	20	1	0	457

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Slightly Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	14	22	3	0	0	0	39
NNE	12	8	0	0	0	0	20
NE	7	6	0	0	0	0	13
ENE	11	8	3	0	0	0	22
E	11	18	1	0	0	0	30
ESE	10	11	4	0	0	0	25
SE	6	11	5	1	0	0	23
SSE	11	12	2	0	0	0	25
S	12	26	5	1	0	0	44
SSW	14	24	0	0	0	0	38
SW	27	21	1	0	0	0	49
WSW	29	18	1	0	0	0	48
W	23	18	0	0	0	0	41
WNW	19	18	3	0	0	0	40
NW	21	14	6	1	0	0	42
NNW	13	15	0	0	0	0	28
Variable	0	0	0	0	0	0	0
Total	240	250	34	3	0	0	527

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Moderately Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	9	11	0	0	0	0	20
NNE	2	3	0	0	0	0	5
NE	6	4	0	0	0	0	10
ENE	9	1	0	0	0	0	10
E	9	4	0	0	0	0	13
ESE	12	5	0	0	0	0	17
SE	12	0	0	0	0	0	12
SSE	10	0	0	0	0	0	10
S	10	6	0	0	0	0	16
SSW	14	3	0	0	0	0	17
SW	41	3	0	0	0	0	44
WSW	33	1	0	0	0	0	34
W	29	2	0	0	0	0	31
WNW	18	2	0	0	0	0	20
NW	20	4	0	0	0	0	24
NNW	16	27	0	0	0	0	43
Variable	0	0	0	0	0	0	0
Total	250	76	0	0	0	0	326

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Extremely Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	0	0	0	0	1
NNE	3	0	0	0	0	0	3
NE	0	1	0	0	0	0	1
ENE	1	0	0	0	0	0	1
E	1	1	0	0	0	0	2
ESE	2	1	0	0	0	0	3
SE	3	1	0	0	0	0	4
SSE	0	0	0	0	0	0	0
S	4	0	0	0	0	0	4
SSW	4	2	0	0	0	0	6
SW	10	0	0	0	0	0	10
WSW	7	0	0	0	0	0	7
W	4	2	0	0	0	0	6
WNW	5	0	0	0	0	0	5
NW	6	0	0	0	0	0	6
NNW	2	0	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	52	9	0	0	0	0	61

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Period of Record: October – December 2005
Stability Class - Extremely Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	3	1	0	0	0	4
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	2	0	0	0	2
ESE	0	1	0	0	0	0	1
SE	0	4	0	0	0	0	4
SSE	1	3	0	0	0	0	4
S	1	2	1	0	0	0	4
SSW	0	3	9	0	0	0	12
SW	2	5	4	0	0	0	11
WSW	0	0	1	1	0	0	2
W	0	3	5	1	0	0	9
WNW	5	1	3	1	0	0	10
NW	8	7	3	6	0	0	24
NNW	1	4	12	1	0	0	18
Variable	0	0	0	0	0	0	0
Total	18	36	41	10	0	0	105

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0

Stability Class - Moderately Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	10	5	0	0	0	15
NNE	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	0	2	0	0	0	2
E	0	2	2	0	0	0	4
ESE	0	1	0	0	0	0	1
SE	0	3	0	0	0	0	3
SSE	2	1	0	0	0	0	3
S	1	2	1	0	0	0	4
SSW	0	1	1	0	0	0	2
SW	0	2	3	0	0	0	5
WSW	0	0	2	0	0	0	2
W	1	1	7	3	2	0	14
WNW	0	2	5	4	0	0	11
NW	3	2	15	11	0	0	31
NNW	2	7	6	1	0	0	16
Variable	0	0	0	0	0	0	0
Total	10	34	49	19	2	0	114

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Slightly Unstable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	3	3	0	0	0	6
NNE	0	1	0	0	0	0	1
NE	0	1	0	0	0	0	1
ENE	1	0	2	0	0	0	3
E	0	1	0	0	0	0	1
ESE	0	1	3	0	0	0	4
SE	0	1	0	0	0	0	1
SSE	1	0	0	0	0	0	1
S	2	2	2	0	0	0	6
SSW	0	1	0	0	0	0	1
SW	0	0	1	0	0	0	1
WSW	0	0	1	0	0	0	1
W	0	1	6	2	0	0	9
WNW	0	1	9	7	1	0	18
NW	1	4	11	8	0	0	24
NNW	0	5	11	0	0	0	16
Variable	0	0	0	0	0	0	0
Total	5	22	49	17	1	0	94

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Neutral - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	10	35	4	0	0	0	49
NNE	7	18	0	0	0	0	25
NE	5	17	1	0	0	0	23
ENE	4	31	2	0	0	0	37
E	22	11	6	0	0	0	39
ESE	3	18	16	0	0	0	37
SE	9	17	7	0	0	0	33
SSE	6	16	5	3	0	0	30
S	6	6	9	4	1	0	26
SSW	9	10	12	3	0	0	34
SW	4	6	11	2	0	0	23
WSW	4	18	18	0	0	0	40
W	5	41	40	9	0	0	95
WNW	3	26	85	51	6	0	171
NW	7	29	70	42	17	0	165
NNW	11	36	19	6	1	0	73
Variable	0	0	0	0	0	0	0
Total	95	345	315	120	25	0	900

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Slightly Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	7	14	1	0	0	0	22
NNE	4	8	0	0	0	0	12
NE	7	9	0	0	0	0	16
ENE	5	7	0	0	0	0	12
E	6	7	2	0	0	0	15
ESE	10	5	3	0	0	0	18
SE	7	1	4	5	0	0	17
SSE	8	10	3	12	0	0	33
S	9	16	9	1	0	0	35
SSW	7	16	6	1	0	0	30
SW	17	20	4	0	0	0	41
WSW	13	39	3	1	0	0	56
W	16	36	9	3	0	0	64
WNW	10	15	27	13	1	0	66
NW	11	15	26	13	1	0	66
NNW	12	22	6	0	0	0	40
Variable	0	0	0	0	0	0	0
Total	149	240	103	49	2	0	543

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Moderately Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	6	6	0	0	0	0	12
NNE	5	1	0	0	0	0	6
NE	5	1	0	0	0	0	6
ENE	6	3	0	0	0	0	9
E	6	4	0	0	0	0	10
ESE	12	1	0	0	0	0	13
SE	12	2	0	0	0	0	14
SSE	11	1	0	0	0	0	12
S	16	2	0	0	0	0	18
SSW	9	8	0	0	0	0	17
SW	11	5	0	0	0	0	16
WSW	18	6	1	0	0	0	25
W	16	4	0	0	0	0	20
WNW	6	0	0	1	0	0	7
NW	12	2	3	0	0	0	17
NNW	7	6	0	0	0	0	13
Variable	0	0	0	0	0	0	0
Total	158	52	4	1	0	0	215

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Stability Class - Extremely Stable - 150Ft-33Ft Delta-T (F)
Winds Measured at 100 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	3	0	0	0	0	6
NNE	3	0	0	0	0	0	3
NE	1	0	0	0	0	0	1
ENE	1	1	0	0	0	0	2
E	4	3	0	0	0	0	7
ESE	7	4	0	0	0	0	11
SE	13	0	0	0	0	0	13
SSE	14	0	0	0	0	0	14
S	10	2	0	0	0	0	12
SSW	15	2	0	0	0	0	17
SW	12	0	0	0	0	0	12
WSW	9	3	0	0	0	0	12
W	9	1	0	0	0	0	10
WNW	2	0	0	0	0	0	2
NW	7	0	0	0	0	0	7
NNW	5	1	0	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	115	20	0	0	0	0	135

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Attachment 7
2005 Annual Radioactive Effluent Releases Report for TMI
5928-06-20444

Assessment of Radiation Doses Due to Radioactive Liquid and Gaseous Effluents Released from TMI during 2005

TMI-1

The attached table presents the maximum hypothetical doses to an individual and the general population resulting from 2005 TMI-1 releases of gaseous and liquid effluents. Provided below is a brief explanation of the table.

A. Liquid (Individual)

Calculations were performed on the four age groups and seven organs recommended in Regulatory Guide 1.109. The pathways considered for TMI-1 were the consumption of drinking water and fish and standing on the shoreline influenced by TMI-1 effluents. The latter two pathways are considered to be the primary recreational activities associated with the Susquehanna River in the vicinity of TMI. The "critical receptor" or Receptor 1 was that individual who 1) consumed Susquehanna River water from the nearest downstream drinking water supplier (Wrightsville Water Supply), 2) consumed fish residing in the vicinity of the TMI-1 liquid discharge outfall and 3) occupied an area of shoreline influenced by the TMI-1 liquid discharge.

For 2005 the calculated maximum whole body (or total body) dose from TMI-1 liquid effluents was 1.12E-2 mrem to an adult (line 1). The maximum organ dose was 1.41E-2 mrem to the liver of an adult (line 2).

B. Gaseous (Individual)

There were six major pathways considered in the dose calculations for TMI-1 gaseous effluents. These were: (1) plume exposure (2) inhalation, consumption of; (3) cow milk, (4) vegetables and fruits, (5) meat, and (6) standing on contaminated ground. Real-time meteorology was used in all dose calculations for gaseous effluents.

Lines 3 and 4 present the maximum plume exposure at or beyond the site boundary. The notation of "air dose" is interpreted to mean that these doses are not to an individual, but are considered to be the maximum doses that

would have occurred at or beyond the site boundary. The table presents the distance in meters to the location in the affected sector (compass point) where the theoretical maximum plume exposures occurred. The calculated maximum plume exposures were 9.61E-5 mrad and 1.95E-4 mrad for gamma and beta, respectively.

The maximum organ dose due to the release of iodines, particulates and tritium from TMI-1 in 2005 was 1.58E-2 mrem to the liver, total body, thyroid, kidney, lung and GI-LLI of an child residing 2150 meters from the site in the NNE sector (line 5). This dose again reflects the maximum exposed organs for the appropriate age group.

For 2005, TMI-1 liquid and gaseous effluents resulted in maximum hypothetical doses that were a small fraction of the quarterly and yearly ODCM dose limits.

TMI-1
SUMMARY OF MAXIMUM INDIVIDUAL DOSES FOR TMI-1 FROM
January 1, 2005 through December 31, 2005

Effluent	Applicable Organ	Estimated Dose (mrem)	Age Group	Location Dist (m)	Location Dir (to)	% of ODCM Dose Limit		ODCM Dose Limit (mrem)	
						Quarter	Annual	Quarter	Annual
(1) Liquid	Total Body	1.12E-2	Adult	Receptor 1		7.47E-1	3.73E-1	1.5	3
(2) Liquid	Liver	1.41E-2	Adult	Receptor 1		2.82E-1	1.41E-1	5	10
(3) Noble Gas	Air Dose (gamma-mrad)	9.61E-5	---	610	SE	1.92E-3	9.61E-4	5	10
(4) Noble Gas	Air Dose (beta-mrad)	1.95E-4	---	2000	NNE	1.95E-3	9.75E-4	10	20
(5) Iodine, Tritium & Particulates	Liver, Total Body, Thyroid, Kidney, Lung & GI-LLI	1.58E-2	Child	2150	NNE	2.11E-1	1.05E-1	7.5	15

TMI-2

The attached table presents the maximum hypothetical doses to an individual and the general population resulting from 2005 TMI-2 releases of gaseous and liquid effluents. Provided below is a brief explanation of the table.

A. Liquid (Individual)

Calculations were performed on the four age groups and seven organs recommended in Regulatory Guide 1.109. The pathways considered for TMI-2 were the consumption of drinking water and fish and standing on the shoreline influenced by TMI-2 effluents. The latter two pathways are considered to be the primary recreational activities associated with the Susquehanna River in the vicinity of TMI. The "critical receptor" or Receptor 1 was that individual who 1) consumed Susquehanna River water from the nearest downstream drinking water supplier (Wrightsville Water Supply), 2) consumed fish residing in the vicinity of the TMI-2 liquid discharge outfall and 3) occupied an area of shoreline influenced by the TMI-2 liquid discharge.

For 2005 the calculated maximum whole body (or total body) dose from TMI-2 liquid effluents was 4.32E-4 mrem to an adult (line 1). The maximum organ dose was 6.87E-4 mrem to the liver of a teen (line 2).

B. Gaseous (Individual)

There were six major pathways considered in the dose calculations for TMI-2 gaseous effluents. These were: (1) plume exposure (2) inhalation, consumption of; (3) cow milk, (4) vegetables and fruits, (5) meat, and (6) standing on contaminated ground. Real-time meteorology was used in all dose calculations for gaseous effluents.

Since there were no noble gases released from TMI-2 during 2005, the gamma and beta air doses (lines 3 and 4, respectively) were zero.

The maximum organ dose due to the release of particulates and tritium from TMI-2 in 2005 was 5.48E-5 mrem to the liver, total body, thyroid, kidney, lung and GI tract of a child residing 2000 meters from the site in the SE sector (line 5).

For 2005, TMI-2 liquid and gaseous effluents resulted in maximum hypothetical doses that were a small fraction of the quarterly and yearly ODCM dose limits.

TMI-2
SUMMARY OF MAXIMUM INDIVIDUAL DOSES FOR TMI-2 FROM
January 1, 2005 through December 31, 2005

Effluent	Applicable Organ	Estimated Dose (mrem)	Age Group	Location Dist (m)	Location Dir (to)	% of ODCM Dose Limit Quarter	% of ODCM Dose Limit Annual	ODCM Dose Limit (mrem) Quarter	ODCM Dose Limit (mrem) Annual
(1) Liquid	Total Body	4.32E-4	Adult	Receptor 1		2.88E-2	1.44E-2	1.5	3
(2) Liquid	Liver	6.87E-4	Teen	Receptor 1		1.37E-2	6.87E-3	5	10
(3) Noble Gas	Air Dose (gamma-mrad)	0	---	---	---	0	0	5	10
(4) Noble Gas	Air Dose (beta-mrad)	0	---	---	---	0	0	10	20
(5) Tritium & Particulate	Liver, Total Body, Thyroid, Kidney, Lung & GI Tract	5.48E-5	Child	2000	SE	7.31E-4	3.65E-4	7.5	15

Attachment 8
2005 Annual Radioactive Effluent Releases Report for TMI
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Assessment of Radiation Doses from Liquid and Gaseous Effluents Releases to Members of the Public within the TMI Site Boundaries during 2005

The Offsite Dose Calculation Manual requires an assessment of the radiation doses from radioactive liquid and gaseous effluents to members of the public due to their activities inside the site boundary during the reporting period. The estimated dose to a member of the public at or within the TMI Site Boundary was 0.6 mrem for 2005.

The following are the assumptions made in this assessment:

Access to the TMI Owner Controlled Area is limited by Site Security to only those persons who have business related activities that support the operation of the facility. Therefore, based on the definition of a 'member of the public' in NUREG-1301, there is no credible scenario for this individual to receive non-occupational dose inside the TMI Owner Controlled Area. The scenario selected will be recreational use of the Susquehanna River and shoreline next to the Owner Controlled Area fence. Based on the two definitions of Site Boundary in the ODCM, this scenario is AT the Site Boundary for liquid releases but INSIDE the Site Boundary for gaseous releases.

A member of the public stays next to the owner controlled area for 67 hours. The 67 hours is based upon Reg. Guide 1.109 shoreline recreation period given in Table E-5. This is a table of recommended values to be used for the maximum exposed individual in lieu of site-specific data. Three Mile Island is co-located with other islands in the Lake Frederick area of the Susquehanna River. This area is used recreationally for boating and fishing over the summer months. The application of the 67 hours of recreational use from Reg. Guide 1.109 is appropriate.

The dose from liquid effluents were included in this scenario. The highest activity contained in releases from TMI are from batch releases from the Waste Evaporator Condensate Tanks. The maximum time period for a single release was 12 hours. Since the time of a single release is less than the 67 hours of recreational use of the river, the highest quarterly cumulative dose from liquid effluents will be used in this calculation. The highest quarterly cumulative dose was 2.19E-2 mrem, total body. This cumulative dose included both batch and continuous liquid releases. Assuming that the total dose from a quarter was received in the 67 hours is conservative.

The highest dose from a single airborne release is characterized by release G200501542. This release contained the highest concentration of tritium of any gaseous release. In 2005, tritium released in gaseous effluents comprised 99 percent of the total curies released to the environment. No other releases would yield a higher dose than the release with the highest tritium concentration. This release occurred over 169 hours. The entire dose from this release will be applied to the 67 hour recreational use period. The application of the total dose from this release to 67 hours is

conservative. The total dose from release G200501542 was 2.31E-3 mrem to the critical receptor.

The highest fenceline TLD result (assumed to be equal to dose) will be added to the dose from the highest liquid and gaseous releases to yield the hypothetical maximum dose to a member of the public within the site boundaries.

The highest fenceline TLD result for 2005 was from Station P1-2 and was 6.4 mrem per standard month. The net TLD dose, obtained by subtracting the results from a control station TLD from the indicator results, was not used. This again is conservative.

Calculations:

6.4 mrem/std mo. * 1/30.44 d/std mo. * 1/24 hr/day * 67 hr = 0.59 mrem

The dose from gas release G200501542 was 0.0023 mrem.

The quarterly cumulative dose from liquid effluents was 0.0219 mrem.

Total Dose Calculation

0.59 mrem + 0.0023 mrem + 0.022 = 0.61 mrem

Attachment 9
2005 Annual Radioactive Effluent Releases Report for TMI
5928-06-20444

Assessment of Radiation Dose to Most Likely Exposed Real Individual per 40 CFR 190

Dose calculations were performed to demonstrate compliance with 40 CFR 190 (ODCM Part IV Section 2.10). Gaseous and liquid effluents released from TMI-1 and TMI-2 in 2005 resulted in maximum individual doses (regardless of age group) of 0.035 mrem to the thyroid and 0.077 mrem to any other organ including the whole (total) body. The direct radiation component was determined using the highest quarterly fence-line exposure rate as measured by an environmental TLD, and subtracting from it, the lowest quarterly environmental TLD exposure rate.

Based on the maximum exposure rate of 6.4 mR/standard month, a person residing at the fence-line for 67 hours (shoreline exposure from Reg. Guide 1.109) received an exposure of 0.59 mR. Based on the lowest exposure rate of 2.0 mR/standard month and converting it by the same method yielded a background exposure of 0.18 mR. Therefore, the net exposure from direct radiation from TMINS was 0.41 mR. Combining the direct radiation exposure (assumed to be equal to dose) with the maximum organ doses from liquid and gaseous releases, the maximum potential (total) doses were 0.45 mrem to the thyroid and 0.49 mrem to any other organ. Both doses were well below the limits specified in 40 CFR 190.

Deviations from the ODCM Sampling and Analysis Regime during 2005

There was one deviation from the ODCM sampling program in 2005.

The Unit 1 Turbine Building Sump Compositor was declared out of service from 8 November 2005 until 19 November 2005. This is a flow proportional composite sampler for continuous releases from the Turbine Building Sump. This is a requirement of the ODCM, Part 1, Table 3.2-1-A.2. Compensatory samples were taken while the compositor was OOS, IAW Station procedure 6610-ADM-4250.09, Tracking Continuous Releases from the Turbine Building Sump.

Attachment 11
2005 Annual Radioactive Effluent Releases Report for TMI
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Errata report for the 2004 Annual Radioactive Effluent Releases Report

An errata report was required due to the omission of several continuous releases of tritium from the Unit 1 Spent Fuel Pool for the second half of the year. Only the affected pages are attached. Most changes are annotated in bold font. An exception to this is for Table 1A , the curies of tritium released by quarter are not annotated in bold.

TABLE 1A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES
TMI-1

	UNITS	2004 1ST QUARTER	2004 2ND QUARTER	2004 3RD QUARTER	2004 4TH QUARTER	EST. TOTAL ERROR %
A. FISSION AND ACTIVATION GASES						
1. TOTAL RELEASE	Ci	9.27E-01	1.59E-01	7.07E-02	7.81E-02	26%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.19E-01	2.02E-02	8.90E-03	9.83E-03	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
B. IODINES						
1. TOTAL IODINE I-131	Ci	3.14E-08	1.85E-08	5.91E-08	1.17E-07	27%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	4.03E-09	2.35E-09	7.44E-09	1.47E-08	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
C. PARTICULATES						
1. PARTICULATES WITH HALF-LIVES > 8 DAYS	Ci	<LLD	4.51E-06	<LLD	<LLD	27%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	NA	5.74E-07	NA	NA	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
4. GROSS ALPHA RADIOACTIVITY	Ci	<LLD	<LLD	<LLD	<LLD	
D. TRITIUM						
1. TOTAL RELEASE	Ci	2.48E+01	2.50E+01	7.69E+01	4.86E+01	15%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	3.19E+00	3.18E+00	9.67E+00	6.15E+00	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	

* % ODCM LIMITS: LISTED ON DOSE SUMMARY TABLE

Assessment of Radiation Doses Due to Radioactive Liquid and Gaseous Effluents Released from TMI during 2004

TMI-1

The attached table presents the maximum hypothetical doses to an individual and the general population resulting from 2004 TMI-1 releases of gaseous and liquid effluents. Provided below is a brief explanation of the table.

A. Liquid (Individual)

Calculations were performed on the four age groups and seven organs recommended in Regulatory Guide 1.109. The pathways considered for TMI-1 were the consumption of drinking water and fish and standing on the shoreline influenced by TMI-1 effluents. The latter two pathways are considered to be the primary recreational activities associated with the Susquehanna River in the vicinity of TMI. The "critical receptor" or Receptor 1 was that individual who 1) consumed Susquehanna River water from the nearest downstream drinking water supplier (Wrightsville Water Supply), 2) consumed fish residing in the vicinity of the TMI-1 liquid discharge outfall and 3) occupied an area of shoreline influenced by the TMI-1 liquid discharge.

For 2004, the calculated maximum whole body (or total body) dose from TMI-1 liquid effluents was 1.12E-2 mrem to an adult (line 1). The maximum organ dose was 1.41E-2 mrem to the liver of an adult (line 2).

B. Gaseous (Individual)

There were six major pathways considered in the dose calculations for TMI-1 gaseous effluents. These were: (1) plume exposure (2) inhalation, consumption of; (3) cow milk, (4) vegetables and fruits, (5) meat, and (6) standing on contaminated ground. Real-time meteorology was used in all dose calculations for gaseous effluents.

Lines 3 and 4 present the maximum plume exposure at or beyond the site boundary. The notation of "air dose" is interpreted to mean that these doses are not to an individual, but are considered to be the maximum doses that would have occurred at or beyond the site boundary. The table presents the distance in meters to the location in the affected sector (compass point) where the theoretical maximum plume exposures occurred. The calculated maximum plume exposures were 9.61E-5 mrad and 1.95E-4 mrad for gamma and beta, respectively.

The maximum organ dose due to the release of iodines, particulates and tritium from TMI-1 in 2004 was **2.43E-2** mrem to the liver, total body, thyroid, kidney, lung and GI-LLI of an child residing 2150 meters from the site in the

NNE sector (line 5). This dose again reflects the maximum exposed organs for the appropriate age group.

For 2004, TMI-1 liquid and gaseous effluents resulted in maximum hypothetical doses that were a small fraction of the quarterly and yearly ODCM dose limits.

TMI-1
SUMMARY OF MAXIMUM INDIVIDUAL DOSES FOR TMI-1 FROM
January 1, 2004 through December 31, 2004

Effluent	Applicable Organ	Estimated Dose (mrem)	Age Group	Location Dist (m)	Location Dir (to)	% of ODCM Dose Limit		ODCM Dose Limit (mrem)	
						Quarter	Annual	Quarter	Annual
(1) Liquid	Total Body	1.12E-2	Adult	Receptor 1		7.47E-1	3.73E-1	1.5	3
(2) Liquid	Liver	1.41E-2	Adult	Receptor 1		2.82E-1	1.41E-1	5	10
(3) Noble Gas	Air Dose (gamma-mrad)	9.61E-5	---	610	SE	1.92E-3	9.61E-4	5	10
(4) Noble Gas	Air Dose (beta-mrad)	1.95E-4	---	2000	NNE	1.95E-3	9.75E-4	10	20
(5) Iodine, Tritium & Particulates	Liver, Total Body, Thyroid, Kidney, Lung & GI-LLI	**2.43E-2**	Child	2150	NNE	**3.24E-1**	**1.62E-1**	7.5	15

Assessment of Radiation Doses from Liquid and Gaseous Effluents Releases to Members of the Public within the TMI Site Boundaries during 2004

The Offsite Dose Calculation Manual requires an assessment of the radiation doses from radioactive liquid and gaseous effluents to members of the public due to their activities inside the site boundary during the reporting period. The estimated dose to a member of the public at or within the TMI Site Boundary was 0. 5 mrem for 2004.

The following are the assumptions made in this assessment:

Access to the TMI Owner Controlled Area is limited by Site Security to only those persons who have business related activities that support the operation of the facility. Therefore, based on the definition of a 'member of the public' in NUREG-1301, there is no credible scenario for this individual to receive non-occupational dose inside the TMI Owner Controlled Area. The scenario selected will be recreational use of the Susquehanna River and shoreline next to the Owner Controlled Area fence. Based on the two definitions of Site Boundary in the ODCM, this scenario is AT the Site Boundary for liquid releases but INSIDE the Site Boundary for gaseous releases.

A member of the public stays next to the owner controlled area for 67 hours. The 67 hours is based upon Reg. Guide 1.109 shoreline recreation period given in Table E-5. This is a table of recommended values to be used for the maximum exposed individual in lieu of site-specific data. Three Mile Island is co-located with other islands in the Lake Frederick area of the Susquehanna River. This area is used recreationally for boating and fishing over the summer months. The application of the 67 hours of recreational use from Reg. Guide 1.109 is appropriate.

The dose from liquid effluents were included in this scenario. The highest activity contained in releases from TMI are from batch releases from the Waste Evaporator Condensate Tanks. The maximum time period for a single release was 11 hours. Since the time of a single release is less than the 67 hours of recreational use of the river, the highest quarterly cumulative dose from liquid effluents will be used in this calculation. The highest quarterly cumulative dose was 8.66E-3 mrem, total body. This cumulative dose included both batch and continuous liquid releases. Assuming that the total dose from a quarter was received in the 67 hours is conservative.

The highest dose from a single airborne release is characterized by release **G200407588**. This release contained the highest concentration of tritium of any gaseous release. In 2004, tritium released in gaseous effluents comprised 99 percent of the total curies released to the environment. No other releases would yield a higher dose than the release with the highest tritium concentration. This release occurred over **167** hours. The entire dose from this release will be applied to the 67 hour recreational use period. The application of the total dose from this release to 67 hours is conservative. The total dose from release **G200407588** was **4.55E-3** mrem to the critical receptor.

The highest fenceline TLD result will be added to the dose from the highest liquid and gaseous releases to yield the hypothetical maximum dose to a member of the public within the site boundaries.

The highest fenceline TLD result for 2004 was from Station G1-6 and was 5.1 mrem per standard month.

Calculations:

5.1 mrem/std mo. * 1/30.44 d/std mo. * 1/24 hr/day * 67 hr = 0.47 mrem

The dose from gas release **G200407588** was **0.005** mrem.

The quarterly cumulative dose from liquid effluents was 0.00866 mrem.

Total Dose Calculation

0.47 mrem + **0.005** mrem + 0.009 = **0.484** mrem

Assessment of Radiation Dose to Most Likely Exposed Real Individual per 40 CFR 190

Dose calculations were performed to demonstrate compliance with 40 CFR 190 (ODCM Part IV Section 2.10). Gaseous and liquid effluents released from TMI-1 and TMI-2 in 2004 resulted in maximum individual doses (regardless of age group) of 0.022 mrem to the thyroid and 0.031 mrem to any other organ including the whole (total) body. The direct radiation component was determined using the highest quarterly fence-line exposure rate as measured by an environmental TLD, and subtracting from it, the lowest quarterly environmental TLD exposure rate.

Based on the maximum exposure rate of 5.1 mR/standard month, a person residing at the fence-line for 67 hours (shoreline exposure from Reg. Guide 1.109) received an exposure of 0.47 mR. Based on the lowest exposure rate of 1.6 mR/standard month and converting it by the same method yielded a background exposure of 0.15 mR. Therefore, the net exposure from direct radiation from TMINS was 0.32 mR. Combining the direct radiation exposure (assumed to be equal to dose) with the maximum organ doses from liquid and gaseous releases, the maximum potential (total) doses were **0.35** mrem to the thyroid and **0.36** mrem to any other organ. Both doses were well below the limits specified in 40 CFR 190.

Enclosure 1
2005 Annual Radioactive Effluent Releases Report for TMI
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